

Appl. No. : 10/747,866
Filed : December 29, 2003

REMARKS

In response to the Office Action mailed January 25, 2005, Applicant respectfully requests that the Examiner reconsider the above-captioned application in light of the above amendments and the following comments.

The Claims Comply with 35 U.S.C. § 112

The Examiner rejected Claims 1-3 and 16-19 under 35 U.S.C. § 112, first paragraph, contending that Applicant's limitation that the curved segment bend by at least 180 degrees is not supported by the original disclosure. Applicant respectfully traverses the rejection, and contends that Applicant's original disclosure clearly supports this limitation.

Applicant's specification clearly discloses an embodiment of a C-spring 16 having a top segment 25, a bottom segment 27 and a curved segment 29. (Specification, ¶30, Figures 1-3). Figure 1 clearly shows the curved segment bending by 180°, as the top and bottom segments are depicted substantially parallel. Figure 6 illustrates another embodiment, in which the top and bottom segments aren't quite parallel, and it is clear that the curved segment is bent more than 180°.

Since Figures 1 and 6 show a curved segment bending substantially 180° and a curved segment bending more than 180°, the original disclosure clearly supports a curved segment bending at least 180°. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection.

There is No Motivation to Combine Vanderminden, Rowland and Holmstrom

In the Office Action, the Examiner rejects claims based on the combination of the Vanderminden and Rowland references. Applicant respectfully contends that there is no motivation to combine the Vanderminden and Rowland references. As Applicant has noted previously, Vanderminden is directed to a swivel rocker chair, and Rowland teaches a single-leaf spring for a vehicle. The Examiner contends that Rowland specifically discloses the motivation to combine as to "evenly distribute stress" (Office Action p. 5). However, Rowland specifically states that its construction is intended to make the stress under loading constant throughout the length of the spring (col 1, ll. 16-20; col. 3, ll. 4-6). To accomplish this purpose, the Rowland leaf spring tapers in width and thickness, and includes a groove that also tapers in size (col. 2, ll.

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20-54). Further, Rowland's leaf spring has an arcuate shape defined by a substantially constant radius of curvature. This is important to the Rowland spring's ability to accomplish its stated purpose of keeping stress substantially constant throughout the length of the spring by using tapering spring dimensions.

In contrast, Vanderminden does not address stress distributions, and is instead directed to an arrangement that provides soft rocking motion. Vanderminden's spring structure does not recognize any need for a constant stress load throughout the length of the spring. In fact, Rowland's structure would NOT be capable of keeping stress constant throughout the length of Vanderminden's springs because of the dramatic differences in geometry and method of use between the devices.

Further, the springs of Vanderminden and Rowland are built for vastly different types of loads. Vanderminden's spring is directed to a force in a direction generally from one end of the spring toward another so that the ends of the spring will move toward and away from one another. In stark contrast, Rowland's leaf-spring is designed for a force directed in a direction generally perpendicular to a line between the ends of the spring; the ends of Rowland's spring are fixed and immovable relative to one another. It seems impossible to find two non-coil springs whose application force directions and applied behavior could be any more different.

The teachings of Vanderminden and Rowland are directed to different applications and needs. As such, a person of ordinary skill in the art would not be motivated to combine them.

The Examiner also contends that a combination of Vanderminden and Rowland may be further combined with Holmstrom. Applicant respectfully disagrees. The Examiner uses Holmstrom for the teaching of a hole for fasteners being formed in the spring. However, as shown clearly in Rowland, leaf springs are not conducive to the mounting arrangements that employ such holes. Instead, Rowland teaches the spring member being formed into eyes 5 at each end, and the eyes 5 attached to a car frame D by way of a shackle F. A person of skill in the art would not be motivated to create a fastener hole in Rowland's leaf spring. As such, there is no motivation to combine these references.

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Claims are Patentable Over Vanderminden+Rowland+Holmstrom

Even if Vanderminden, Rowland, and Holmstrom were combined as suggested by the Examiner, the combination does not teach or suggest all of the limitations of the claims as presently constituted.

As noted above, Rowland's spring, groove and ribs all taper, substantially continuously, along the length of the spring. Further, none of these references, alone or in combination, teach or suggest a mount component having a mount surface specially contoured to complement the contour of the spring member outer surface. Still further, this combination does not teach or suggest grooves or the like disposed in flat, non-curved segments. Even further, this combination does not teach or suggest an elongate slot formed through the spring.

The Vanderminden + Rowland + Holmstrom combination does not teach or suggest all of the limitations of the present claims. For example, it does not teach or suggest a central channel extending longitudinally along a first side from a first end to a second end, the channel having substantially the same cross sectional dimensions in the top, bottom and curved segments (as recited in Claim 1), or a mount component having a mount surface specially contoured to complement the contour of a C-shaped member outer surface (as recited in Claim 10).

Since this combination does not teach or suggest all of the limitations of the claims as presently constituted, Applicant respectfully requests that the Examiner withdraw the rejection of these claims.

Claims are Patentable Over Vanderminden+Mies+Holmstrom

As an alternative to the Vanderminden/Rowland combination, the Examiner also rejects the claims based on a combination of Vanderminden and Mies. The Examiner further combines Holmstrom with this combination. Applicants traverse the rejection, and contend that the claims as presently constituted are not taught or suggested by this combination of references.

Mies discloses several embodiments of chairs that include a ground engaging portion 14 and a seat engaging portion 16 that are linked by a connecting portion 18. The Examiner specifically refers to the embodiment depicted in Figures 11-14. This embodiment employs a rib or web g. The height of the rib or web g is gradually reduced through the connecting portion 18 towards the seat engaging portion 16. Further, although the seat engaging portion 16 may at least

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partially have a generally rectangular cross section, the rib or web g drastically alters the cross section from rectangular in the ground engaging and connecting portions 14, 18.

This combination does not teach or suggest all of the limitations of the present claims. For example, Claim 4 requires, *inter alia*, a central channel that extends longitudinally along an outer surface to provide a contoured cross-sectional profile, the central channel having substantially the same depth throughout its length; Claim 16 recites, *inter alia*, at least two elongate members each having a substantially rectangular cross-section and first and second ends; Claim 17 recites, *inter alia*, a pair of mount portions, each mount portion having a contoured surface adapted to complement said outer surfaces of said elongate members so that an elongate member fits in the mount portion; and Claim 20 recites, *inter alia*, providing at least two generally flat, elongate spring members each having a first and second end and first and second generally opposing sides, a channel extending along the surface of the first side, substantially from the first end to the second end, the channel having substantially the same depth from the first end to the second end, and bending each of the elongate members to create a substantially flat, elongate upper section, a substantially flat, elongate lower section, and a curved section between the upper and lower sections, the curved section being bent at least about 180°.

With specific regard to Claim 12, the Examiner contends that it would be an obvious matter of design choice to have the side portion 30% thicker than the center portion, and contends that the Applicant does not point out any particular advantage of this dimension. Applicant respectfully traverses the Examiner's statement.

As specifically noted in the specification, Applicant desires to use aluminum for its outdoor furniture in order to take advantage of aluminum's anti-corrosion properties. However, flexible coupling members made of aluminum previously have not been capable of providing the desirable qualities of a steel spring, and thus aluminum coupling members have not met with widespread success. (See Specification, ¶¶ 7, 9, 10). One distinct advantage of Applicant's invention is its advantageous applicability with aluminum. The preferred embodiments disclosed in the specification (see ¶26) are formed of an aluminum alloy. Paragraphs 31-33 of the specification discuss a "unique profile" that provides "a smooth and predictable rocking motion over a wide variety of body weights." Paragraph 33 sets out dimensions for a particularly preferred embodiment having this unique profile, in which side portions are about 30% thicker than a center portion.

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Applicant's specification specifically sets out a particular advantage of the dimensional relationship recited in Claim 12, which is an important discovery. Accordingly, the subject matter of Claim 12 is not merely a matter of design choice, but is a patentable inventive improvement.

New Claims

New Claims 20-28 have been added to more fully recite subject matter Applicant considers to be included in the invention. New Claim 20 is an independent claim from which Claims 21-23 depend. New Claims 24-25 depend from independent Claim 1. New Claims 26-28 depend from independent Claim 16. No new matter has been added. Applicant contends that all of the new claims are currently in condition for allowance.

CONCLUSION

For the reasons stated above, Applicant contends that the present application is now in condition for allowance and such action is respectfully requested. Should the Examiner have any further issues remaining or require further clarification, the Examiner is invited to contact the undersigned at the telephone number below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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5/25/05

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